WorkSafe BC

WorkSafe Bulletin

Commercial nitrox diving in B.C. must use DCIEM or US Navy dive tables

In September 2014, a diver was sent to the recompression chamber at Vancouver General Hospital after surfacing from a dive with symptoms of decompression illness. The employer had been using a dive schedule based on the National Oceanic and Atmospheric Administration (NOAA) tables, which was acceptable to WorkSafeBC at the time. An investigation found the diver was exposed to an increased risk of oxygen toxicity and decompression illness because of the longer bottom times and higher partial pressures of oxygen (PPO^2) allowed by the NOAA Nitrox tables. Commercial diving operations in B.C. are now required to use the Defense and Civil Institute of Environmental Medicine (DCIEM) diving tables or the US Navy diving tables exclusively.

There have been several incidents involving commercial dive companies who chose to use the NOAA tables rather than the DCIEM or US Navy tables. Divers working for these companies have complained of fatigue, headaches, and flu-like symptoms, which can be symptoms of oxygen toxicity. At least three divers developed decompression illness.

Why are only the DCIEM or US Navy tables allowed?

Since the incidents, WorkSafeBC compared the various tables and found that the DCIEM and US Navy tables are more conservative than the NOAA tables because they are designed for industrial work purposes.

If the incident described above had been conducted using the DCIEM or US Navy Tables, the dive would have been classified as a decompression dive. The diver would have been allowed less bottom time and been subject to other regulatory requirements, including more significant decompression times and longer surface intervals. This would have prevented him from being exposed to a higher PPO^2.

Safe work practices

If a diver's workload is moderate to heavy near the established cut-off depth or if PPO^2 is equal to 1.6 ATA, the dive should be conducted on air.

According to the DCIEM tables, the maximum cut-off depth is 110 fsw/34 msw (actual depth) because of the physiological and engineering factors involved in nitrogen-oxygen (nitrox) open-circuit diving.

Resources

- WorkSafeBC Guideline G24.21 Diving tables
- *DCIEM Diving Manual: Air Decompression Procedures and Tables*
- *US Navy Manual, Volume 2*

For more information, go to worksafebc.com and search for "commercial diving."